

3. (Amended) The optical amplifying device according to claim 1, wherein said control means controls the wavelength and an amplitude of the dummy optical signal emitted from said light-emitting means.

4. (Amended) The optical amplifying device according to claim 1, wherein said separating means separates the input optical signal and the dummy optical signal individually.

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5. (Amended) The optical amplifying device according to claim 4, wherein said control means carries out feedback control of said light-emitting means based on the dummy optical signal separated by said separating means.

6. (Amended) The optical amplifying device according to claim 4, wherein said control means controls the wavelength and an amplitude of the dummy optical signal emitted from said light-emitting means, and carries out feedback control of said light-emitting means based on the dummy optical signal separated by said separating means.

7. (Amended) The optical amplifying device according to claim 1, wherein said separating means collectively separates the input optical signal and the dummy optical signal.

8. (Amended) The optical amplifying device according to claim 7, wherein said separating means is an optical router with an AWG (Arrayed Wave Guide) structure.

9. (Amended) The optical amplifying device according to claim 1, wherein said light-emitting means is a distributed Bragg reflector (DBR) type semiconductor laser.

10. (Amended) The optical amplifying device according to claim 1, wherein the input optical signal is a burst optical signal.

11. (Amended) An optical amplifying method for amplifying an input optical signal, said method comprising:

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supplying the input optical signal to a light emitting device for transmitting the input optical signal, and emitting, based on the transmitted input optical signal, a dummy optical signal having a waveform obtained by inverting a waveform of the input optical signal and having a wavelength that is different from a wavelength of the input optical signal;

collectively amplifying the input optical signal and the dummy optical signal transmitted from the light emitting device, and outputting an amplified optical signal; and

separating the input optical signal from the amplified optical signal.

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Please add new claims 12-23 as follows:

12. (New) An optical amplifying device for amplifying an input optical signal, said device comprising:

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a light-emitting device operable to transmit the input optical signal and emit, based on the optical signal transmitted by said light-emitting device, a dummy optical signal having a waveform obtained by inverting a waveform of the input optical signal and having a wavelength that is different from a wavelength of the input optical signal;

a control device operable to control the wavelength of the dummy optical signal emitted from said light-emitting device;

an amplifying device operable to amplify the optical signal and the dummy optical signal transmitted from said light-emitting device, and output an amplified optical signal; and

a separating device operable to separate the input optical signal from the amplified optical signal outputted by said amplifying device.

13. (New) The optical amplifying device according to claim 12, wherein the dummy optical signal is equal in amplitude to the input optical signal.

14. (New) The optical amplifying device according to claim 12, wherein said control device is operable to control the wavelength and an amplitude of the dummy optical signal emitted from said light-emitting device.

15. (New) The optical amplifying device according to claim 12, wherein said separating device is operable to separate the input optical signal and the dummy optical signal individually.

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16. (New) The optical amplifying device according to claim 15, wherein said control device is operable to carry out feedback control of said light-emitting device based on the dummy optical signal separated by said separating device.

17. (New) The optical amplifying device according to claim 15, wherein said control device is operable to control the wavelength and an amplitude of the dummy optical signal emitted from said light-emitting device, and carry out feedback control of said light-emitting device based on the dummy optical signal separated by said separating device.

18. (New) The optical amplifying device according to claim 12, wherein said separating device collectively separates the input optical signal and the dummy optical signal.

19. (New) The optical amplifying device according to claim 18, wherein said separating device is an optical router with an AWG (Arrayed Wave Guide) structure.

20. (New) The optical amplifying device according to claim 12, wherein said light-emitting device is a distributed Bragg reflector (DBR) type semiconductor laser.

21. (New) The optical amplifying device according to claim 12, wherein the input optical signal is a burst optical signal.

22. (New) The optical amplifying device according to claim 1, wherein said separating means is an optical filter.

23. (New) The optical amplifying device according to claim 12, wherein said separating device is an optical filter.
